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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/538,503

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Bruno Le Briere

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EXAMINER

DANG, HUNG Q

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/538,503	<b>Applicant(s)</b> LE BRIERE ET AL.	
	<b>Examiner</b> HUNG Q. DANG	<b>Art Unit</b> 2612	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 10-18 is/are rejected.
- 7) ☒ Claim(s) 8-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This communication is in response the application's claim amendments dated 8/1/2008. The amendments of the abstract, the specification, the claims 1-16 and the newly added claims 17-18 have been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 8/1/2008 have been fully considered but they are not persuasive.

The applicant's arguments are listed as follow:

- Soulier does not disclose a transmitter means and a receiver means electrically connected to the cable and to the drill string or casing and/or the underground formation.
- Soulier does not disclose the limitation that the cable constitutes a portion of a loop for conveying an electrical and/or electromagnetic signal between the transmitter means and the receiver means.

The Examiner disagrees with the Applicant. The Applicant's arguments mainly rest on the claimed term "connected". The claimed term "connected" can be interpreted as a direct or an indirect connection. From figure 7 of Soulier, Soulier does teach a transmitter means (unit 14) and a receiver means (unit 9) electrically connected to the cable (cable 34 and the cable connecting unit 9 and the casing) and to the drill string or casing and/or the underground formation (The transmitter and receiver of Soulier are indeed indirectly connected to the casing through the cable coupling). The cable of

Soulier indeed constitutes a portion of a loop for conveying an electrical and/or electromagnetic signal between the transmitter and the receiver (see figure 7).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 and 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soulier U.S. Patent 5,394,141.

**Regarding claims 1 and 7**, Soulier teaches a transmission device for transmitting data in an installation for working fluids contained underground, the installation comprising a cavity (borehole; see figure 4) defined in an underground formation and extending to the surface of the ground, and at least one electrically conductive tubular element (casing; figure 2, unit 13) having a first point at the surface of the ground and a second point within the cavity, the transmission device comprising a single-strand smooth cable (figure 4, unit 24 or figure 6, unit 17) for supporting an action and/or measurement assembly, being made of an electrically conductive material and being disposed in the tubular element between the first point and the second point, wherein the device being characterized in that a surface of the cable is electrically insulated, at least in part, from said tubular element (column 6, lines 1-5);

transmitter means (figure 7, unit 14) for transmitting an electrical and/or electromagnetic signal, said transmitter means being electrically connected to said cable and to the tubular element and/or the underground formation, and being situated in a vicinity of one or both of the first point and the second point; and

receiver means (figure 7, unit 9) for receiving the electrical and/or electromagnetic signal, said receiver means being electrically connected to said cable and to the tubular element and/or the underground formation, and being situated in a vicinity of the other one or both of the first point and the second point;

wherein said cable is a portion of a loop for conveying the electrical and/or electromagnetic signal between said transmitter means and said receiver means (see figure 7 and column 6 lines 45-68).

Even though, Soulier does not specifically teach that the cable having a breaking strength greater than 300 daN, however, one of ordinary skill in the art would recognize that such breaking strength can be easily derived by one skilled practitioner, depending on the length of the cable and the total weight being suspended on the cable, to obtain an optimal breaking strength of the cable that can endure desired weight. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide such breaking strength to the cable disclosed by Soulier, for the reasons explained above.

**Regarding claims 2 and 4**, the Examiner gives Official Notice that electrical cables in downhole environment have been commonly insulated from the casing, so that short-circuit can be prevented. Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to provide a continuous coating of insulating material or regular intervals with centralizers of insulating material to the cable disclosed by Soulier, as explained above.

**Regarding claim 3**, one of ordinary skill in the art would recognize that the thicker the insulation coating is, the heavier the cable would be and the less signals interference would be. Therefore, it would have been obvious to one of ordinary skill in the art to provide such claimed thickness of insulation to the cable disclosed by Soulier to achieve desired cable weight.

**Regarding claim 5**, see the rejections of claims 1 and 2.

**Regarding claim 6**, the at least one electrically conductive tubular element disclosed by Soulier is also provided with at least a first tubular element (figure 7, unit 37) and a second tubular element (figure 7, unit 36) disposed inside the first tubular element, and wherein the cable is disposed in an annular space between said first tubular element and said second tubular element.

**Regarding claim 10**, the transmission device disclosed by Soulier also comprises a conductor member anchored in the ground, wherein said conductor member electrically connects said transmitter and/or said receiver means in the vicinity of the first point, to the underground formation (figure 7 shows the receiver 9 is being connected by a conductor member anchored in the ground).

**Regarding claim 11**, the transmitter means and the receiver means disclosed by Soulier are indeed situated in the vicinity of the first point and the second point, respectively (see the rejection of claim 1).

**Regarding claim 12**, the transmitter means of the system disclosed by Soulier is situated solely in a vicinity of one of the first point and the second point (see figure 7, transmitter 14 is indeed situated in a vicinity of the second point), and said receiver means is situated solely in a vicinity of the other one of the first point and the second point (figure 7, receiver 9 is indeed situated in a vicinity of the first point).

**Regarding claim 13**, Soulier also teaches an installation for working fluids contained underground, the installation comprising:

A cavity (wellbore shown in figure 7) defined in an underground formation extending to the surface of the ground and closed on the surface by a wellhead;

At least one electrically conductive tubular element (figure 7, cable 34) provided in said cavity; and a transmission device (figure 7, transmitter 14) according to claim 1.

**Regarding claim 14**, the Examiner gives Official Notice that it has been commonly known and applied some sort of applicator for applying insulating coats on cables. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide such insulation applicator to the system disclosed by Soulier so that said cable can be insulated.

**Regarding claim 16**, Soulier also teaches a deployment means (figure 4, unit 23) for deploying said cable; an alignment device for aligning said cable in the wellhead, said alignment device comprising at least one pulley (see figure 4, unit 25). Regarding the claimed “applicator”, see the rejection of claim 14. Regarding the location where the applicator is disposed would have been obvious to one skilled practitioner to derive an

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optimal location where insulating coating can be efficiently applied to the deployed cable.

**Regarding claim 15**, see the rejection of claim 16.

**Regarding claim 17**, even though, Soulier does not specifically teach that said cable has resistivity that is greater than  $30\text{m}\Omega/\text{m}$ , however, it would have been obvious to one skilled practitioner to derive such resistivity for said cable through routine experimentations to achieve optimal data transmission.

**Regarding claim 18**, the Examiner gives Official Notice that slickline or "piano wire" cable have been commonly known and utilized in wellbore systems for data transmission. Therefore, by conventionality, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the cable of the system disclosed by Soulier by slickline or "piano wire" cable.

### ***Allowable Subject Matter***

5. Claims 8-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Regarding claim 8**, the prior arts of record fail to teach the transmission device according to claim 7, wherein characterized in that the electrical signal transmitted by the transmitter means in the vicinity of the first point is injected to a first dipole comprising firstly an electrical contact point between the cable and the transmitter means in the vicinity of the first point, and secondly an electrical contact point between

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the formation and the transmitter means in the vicinity of the first point; the first dipole generating an electromagnetic signal that is received by a second dipole comprising firstly one of said electrical contact points between the cable and the tubular element, and secondly an electrical contact point between the tubular element and the receiver means in the vicinity of the second point, with the electromagnetic signal received by the second dipole generating an electrical signal which is conveyed to the receiver means in the vicinity of the second point.

**Regarding claim 9**, the prior arts of record fail to teach the transmission device according to claim 7, wherein characterized in that the electrical signal transmitted by the transmitter means in the vicinity of the second point is injected into a second dipole comprising firstly one of said electrical contact points between the cable and the tubular element, and secondly an electrical contact point between the tubular element and the transmitter means in the vicinity of the second point, said second dipole generating an electromagnetic signal received by a first dipole comprising, firstly an electrical contact point between the cable and the receiver means in the vicinity of the first point, and secondly an electrical contact point between the formation and the receiver means in the vicinity of the first point; the electromagnetic signal received by the first dipole generating an electrical signal that is conveyed to the receiver means in the vicinity of the first point.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q. DANG whose telephone number is (571)272-3069. The examiner can normally be reached on 9:30AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Zimmerman can be reached on (571) 272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hung Q Dang/  
Examiner, Art Unit 2612